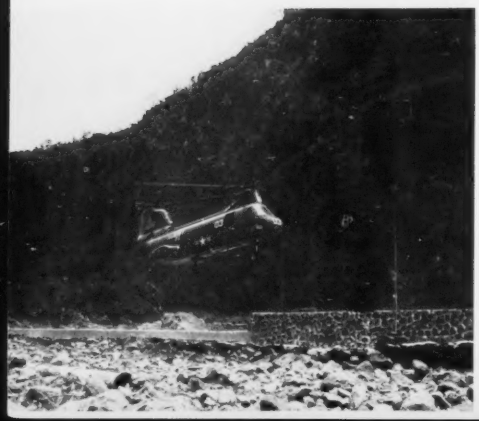
Official Navy Career Publication

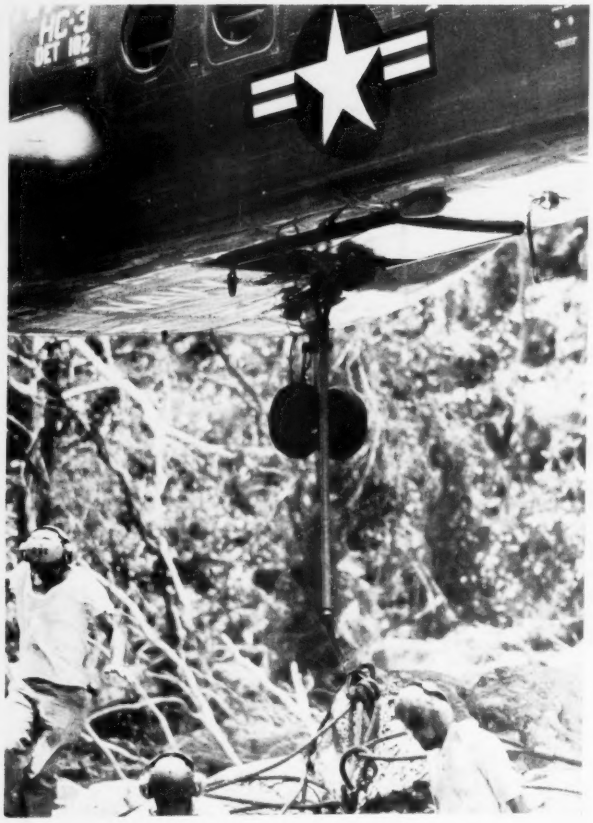
approach

FEBR

MISSION:



TYPHOON MOPUP



By LT Brad Winstead
and LT Mike Willoughby
HC-3

IN mid-February 1975, while deployed in the Indian Ocean, the USS CAMDEN (AOE-2) and HC-3 Det 102's two embarked CH-46D helicopters pulled into the harbor of Port Louis on the island of Mauritius off the coast of Madagascar. Coincidently, Typhoon Gervaise had just ripped through the small island, leaving millions of dollars of damage in its wake. What was to have been a liberty port visit thus became a major disaster relief operation.

One of the peacetime missions of the Navy is to enhance the image of our military forces abroad and render assistance as possible in a variety of nonmilitary roles. In light of this, helicopter crews can expect to be tasked with many unusual and demanding assignments. This disaster relief operation definitely had to be classified as unusual and demanding.

The potential of the detachment's two CH-46D helicopters became apparent soon after arriving in Mauritius. During the CAMDEN's 4-day stay on the island, the detachment carried tons of cargo and numerous passengers, externally lifted water pipes and telephone poles in areas inaccessible by ground transportation, and conducted aerial surveillance to determine the extent of the typhoon's damage. The unique nature of these operations presented a host of safety problems and considerations. Just a few of the many factors to be considered by the aircrews while conducting the relief efforts were:

- The limited range of the CH-46, with the ship being the only source of fuel.
- The lack of detailed navigational and topographical charts of the island.
- The absence of current weather information.
- Most of the landing zones were unprepared and often in confined areas.
- The tropical climate resulted in a high density altitude environment.
- The working relationship between the aircrew and the civilian supervisors, who were completely unfamiliar with helicopters, had to be ironed out. (The civilians would unknowingly attempt to extend the pilot beyond

his or the aircraft's capabilities. Aircraft commanders were required to be particularly careful in this regard, not allowing themselves to jeopardize their aircraft and aircrew by being caught up in the "can-do" spirit of the disaster relief.)

- The requirement to keep onlookers away while conducting helo operations in populated areas. (This is particularly important in external cargo work.)
- Maintaining communications between the aircraft, ground crew personnel, and the ship with only the use of PRC-90 two-way emergency survival radios.

Although all of the operations were directly tied to returning the island to normalcy, the most pressing, complex, and potentially dangerous evolution was the restoration of water service to the capital city of Port Louis. This involved the replacement of damaged water pipes at the bottom of a narrow, inaccessible canyon. The detachment's role was to externally transfer 2500 pounds of water pipe from a staging area at the top of the canyon to the base 300-400 feet below.

Prior to commencing the actual operation, a thorough check of the area was conducted from the ground by the

detachment OinC to determine terrain clearance and possible approach and departure routes. Several empty runs were made to check wind effects, waveoff and power capabilities, and determine suitable flightpaths and visual references to be used while hovering in the drop zone.

Ground crews from the ship were used at one staging area to rig the loads and provide personnel for attaching the load to the helicopter. The loads were lifted using a standard VERTREP pendant attached to a steel cable running lengthwise through the hollow pipe. Civilian police were employed to control the crowd of onlookers who gathered to watch the operation and to keep them away from the helicopter's route of flight. PRC-90 survival radios were used by ground personnel to maintain communications with one airborne helo and provide information on terrain clearance.

The operation itself was conducted using standard VERTREP procedures and practices for flight and ground crews. This was done to minimize the confusion and uncertainty which could have resulted from such an unfamiliar operation. The safe and successful movement of over 40 pipes and several tons of cement mix bears testimony to the value of this approach.

The most important lesson to be learned from these relief efforts is the relative ease with which the established NATOPS and command SOP can be adapted to any operation. By deviating as little as possible from techniques and habits developed through long hours of training, the crews can minimize the number of potentially confusing procedures introduced into an already unfamiliar undertaking. Above all, it must be reiterated that even following a disaster such as a typhoon, the work done by helicopter crews will be important but, with the exception of personnel rescue, is not a matter of life and death, and thus will not justify jeopardizing the safety of the aircraft and crews. By maintaining the proper perspective on each operation, pilots will be able to simultaneously serve the mission of the Navy, assist people throughout the world, and work within the capabilities of themselves and their aircraft. ◄

"Clunk!" . . . IFR. The following incident happened to me almost 2 years ago while I was flying T-28Bs in the training command at NAS Whiting. This incident sticks vividly in my mind every time I put my flight helmet on, and it's something I would like to share with your readers.

After having briefed, preflighted, and started a T-28B for a day student dual formation flight, we had taxied to the runup area for the engine checks. The flight conditions were absolutely magnificent – good weather, good bird, not a cloud in the sky – when all of a sudden I heard a "clunk." This was followed immediately by IFR in the cockpit.

Upon investigating, I found that the plastic visor housing assembly of my helmet had dropped over my eyes, limiting visibility to about 2 inches! The six screws holding the visor cover had worked loose one-by-one. (Nope! I hadn't checked my helmet before flight!) The last screw apparently loosened during the engine runup. If this had happened to me a few days later while on takeoff for a formation solo, things could have been much more interesting.

Needless to say, here was one studmouse that found out the hard way that a good preflight of your equipment is just as important as a good preflight of the aircraft.

Headwork in the Crux. An A-4C *Skyhawk,* piloted by LTJG John R. Petticolas, VC-7, launched as a section lead on a scheduled radar intercept hop. The aircraft was in the final stages of a standard departure, passing through 3500 feet at 98 percent RPM and 325 KIAS, when the engine began to unwind with fuel flow and EGT decreasing rapidly. Lieutenant (jg) Petticolas commenced a zoom climb to initiate an airstart. His wingman confirmed fuel was streaming from the entire empennage section of aircraft.

The pilot, on observing the engine RPM stabilize at 83 percent, stopped his climb, declared an emergency, and turned immediately towards base. As RPM decreased below 80 percent, a straight-in precautionary approach to a shortfield arrestment was executed. At touchdown, the engine was secured by the power control lever and by the emergency fuel shutoff switch. The aircraft came to a stop with 600 pounds of fuel in the fuselage cell.

Postflight inspection revealed a fuel leak on top of the engine-driven fuel pump.

Lieutenant (jg) Petticolas' prompt and precise execution of emergency procedures saved the aircraft. The aircraft lost 4500 pounds of internal fuel in 7 minutes. Given another few minutes, the engine would have flamed out from fuel starvation. A thorough knowledge of NATOPS, coupled with a superb display of airmanship, kept this an incident instead of an accident.

Nice job!

Cancel the SAR. Shortly after assuming the SAR watch late one afternoon, a SAR pilot was surprised to find an engine wash being performed on the Alert SAR helicopter. This was unusual since no maintenance on the duty SAR aircraft is permitted. Firm policy had previously been set forth specifically delineating guidelines for changing the SAR aircraft. Nevertheless, immediate investigation by SAR pilots found all personal flight and SAR gear switched to another helicopter. None of the SAR crew had been advised of the aircraft change, nor

APPROACH is a monthly publication published by Commander, Naval Safety Center, Norfolk, VA 23511. Subscription price: $11.70 per year; $2.95 additional for foreign mailing. Subscription requests should be directed to: Division of Public Documents, Government Printing Office, Washington, DC 20402. Controlled circulation postage paid at Norfolk, VA.

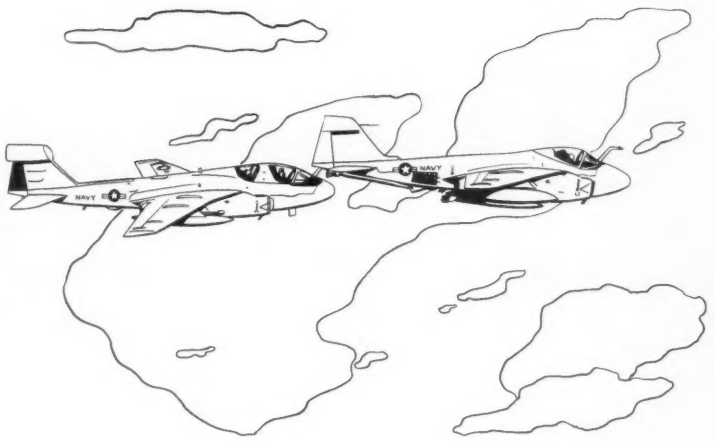
was there even a current daily or preflight performed on the new aircraft. An immediate pilot preflight on the new SAR aircraft was initiated. No sooner had the preflight begun than the Alert SAR launch buzzer sounded. The copilot recommended the old SAR aircraft be used for the launch instead of the new "unpreflighted" aircraft. After a quick conference, the HAC elected to launch immediately in the new, unpreflighted SAR aircraft.

Engine No. 2 was started and No. 1 was just about to be turned up when the tower cancelled the alert. The bird was shut down and the preflight inspection resumed. This revealed two major discrepancies: the rotor brake pucks were not retracted, and both generator air intakes were still *completely* taped over from a previous aircraft wash (another possible fire hazard).

This near-mishap serves to illustrate several salient points:

- Maintenance instructions, regardless of how thorough, can help you avoid trouble only if they are understood and complied with at all levels; i.e., let's re-invent the wheel and actually read and heed required reading materials.
- When proper procedures are broken in order to expedite, it could ruin your whole day and possibly someone else's, too.
- An unpreflighted aircraft remains an unproven and untried entity. The days of "kick the tire and light the fire" should have died long ago.

Inflight Refueling Approach Probs. An EA-6B was at 10,000 feet, 250 knots, practicing inflight refueling on a KA-6D. On the first attempt, the pilot was unsuccessful and, in an attempt to avoid the basket, contact was made between the basket and the top of the rear canopy. On the next attempt, the



EA-6B successfully engaged the drogue with the normal closure rate, but the pilot momentarily lost sight of the tanker behind the canopy bow. The aircraft then continued forward at the same normal closure rate until the basket hit the rudder canoe.

The IFR probe disengaged from the basket and contacted the trailing edge of the horizontal stabilizer, causing the tanker to pitch about 5 degrees. Both aircraft were then visually inspected for damage by remaining aircraft in the flight, and returned to homebase for normal landings.

Damage to the EA-6B consisted of scratches on top of the aft canopy, cracked caulking, popped rivets, scratches on the radome, and a broken MA-2 nozzle on the IFR probe. Damage to the KA-6D was a dent on the port rudder canoe and port horizontal stabilizer. The refueling basket sustained damage to several turkey feathers and the retainer ring.

The EA-6B pilot erred by not maintaining adequate clearance on the first attempt, losing sight of the basket, and damaging the canopy. He erred on the second attempt by losing sight of the tanker and not taking immediate corrective action to regain visual contact. Why a highly experienced pilot would make these mistakes can only be surmised. It can be stated, however, that this incident came close to being a major accident.

Can-do or Should-not? A flight engineer in a P-3 squadron was busily preflighting his aircraft one day. He discovered a fuel leak which automatically downed the aircraft, so the crew shifted to a backup *Orion*.

Apparently, someone had already started a preflight, because when the flight engineer arrived at the backup aircraft, he was told the No. 1 prop spinner deicer was reading 0 amps. (It should have been between 84-100 amps.) The flight engineer recommended to his PPC that the second *Orion* be downed, too.

The weather was 200 feet overcast, solid to 4000, and broken to scattered to 9000. The surface temp was in the 30's.

The PPC called the XO and CO and asked whether to go or not. He went. Fortunately, they didn't ice up on takeoff or during climb through the clouds. Since this was a training flight, however, perhaps prudence was not followed.

Contributor's Corner

By LCDR George Webb
CVW-6 LSO

THE "IN-CLOSE" WAVEOFF

An LSO's Point of View

QUITE a bit of talking is done about the "in-close" waveoff. Unfortunately, most of it is by people who are not qualified LSOs and speak as Monday morning quarterbacks. For example: "If the LSO had not given a late waveoff, the accident would not have occurred." We've all seen similar words written in accident reports. Those words are usually followed by such words of wisdom as, "If the airplane had been waved off sooner in the approach . . . " Why not just say, "If the pilot had not flown that day . . . " Let's take a little more open-minded look at the "insidious" in-close waveoff.

First, we should define what "in-close" really is. My definition may not correspond with everyone's, but I would say that 99 percent of you will agree that I can call any airplane within 5 seconds of touchdown "in-close." This will correspond to a position just aft of the ramp, the exact distance varying, of course, with airplane approach speed and/or wind over the deck.

Given the above definition, let's next define what a waveoff is. In a very basic definition, a waveoff is the termination of an approach by stopping the rate of descent of the airplane. How is this done? For that answer we can go to the individual NATOPS manuals. An average definition in NATOPS is "Apply full power, level the wings, and maintain optimum attitude." Some manuals will have additional techniques such as the "pulse" waveoff mentioned in the F-8 NATOPS manual, but that's beyond our scope here. Well, the "apply full power" and "level the wings" part is pretty straightforward, but what is this "maintain optimum attitude"? Optimum attitude is the attitude of the airplane when it is on glide slope with approach power set and on optimum AOA (angle-of-attack). It is NOT just strictly optimum AOA.

With a little imagination, we can see what would happen if, during the waveoff, a pilot maintained optimum AOA. After he leveled the wings and applied full power, the airspeed would immediately start to increase. This would cause the AOA to initially decrease. To maintain optimum AOA, the pilot would have to raise the nose and then continue raising the nose each time AOA started to decrease again. There is nothing really wrong with this waveoff technique as long as it is NOT done in-close. In fact, it will stop the rate of descent quicker than just maintaining optimum attitude. But let's take a look at what happens if this technique is used in-close. The airplane is just short of the ramp and for some reason a waveoff is necessary. The pilot applies full power, levels the wings, and begins raising the nose to maintain optimum AOA. Since the airplane rotates about the center of gravity, or about midway up the fuselage, the flightpath of the tailhook is initially lowered. Depending on how "in-close" he is, there is a good possibility of grabbing a wire. SPLAT! An inflight engagement and possible accident. The solution is simple: when waved off in-close, MAINTAIN OPTIMUM ATTITUDE. Even if a wire is caught, the airplane is in its optimum landing attitude. In this attitude it is stressed to achieve its highest sink rate without damage. In the optimum attitude, the probability of an accident is at its lowest.

So why talk about in-close waveoffs? Well, we cannot wish them away or prohibit them. There is such a thing in naval aviation and when they are given, it's because they are necessary. LSOs don't give in-close waveoffs just to see if they can catch the pilot sleeping or to check the pilot's reaction time and waveoff technique. That's done during FCLPs.

For all the people who think that whenever an in-close waveoff is given, it's by mistake, let's take a look at how one could occur. Suppose a pilot is on the glide slope, lined up, at optimum AOA, and all of a sudden – in-close of all places – he eases gun and drops the nose. (Sound like a deck spotter?) It's immaterial why he did it; all I know as an LSO is that he must have a death wish because he's heading straight for the ramp! Do I know this pilot will respond properly if I just yell "POWER"? Should I just let him hit the ramp so some

accident endorser can't write those famous words, "If the airplane had been waved off sooner . . . " Not on my watch! WAVE OFF!! At least now I'll be able to chew him out in the readyroom. Besides, why should I have waved him off any sooner since nothing was wrong, unless, of course, you'd rather have a zero boarding rate? A good way to prevent landing accidents, but you don't get too many traps. My point is this: the job of the LSO is to get the air wing aboard SAFELY and EXPEDITIOUSLY. If a pass is within limits, which the LSO is trained to know, it lands; if not, it gets waved off. Simple as that, in-close or in the groove.

Contrary to what it seems some people believe, the LSO is not a soothsayer. He does not know that an airplane will require a waveoff as it rolls into the groove. All the LSO can do is make sure the pilot stays within limits, and if he doesn't, get rid of him. He doesn't quit waving just because the airplane is in-close even though his alternatives are significantly decreased. Hopefully, some of those people who write "If the airplane had been waved off sooner . . . " will come out to the platform and see both why it wasn't and why it had to be waved off where it was. Then we can ask them how they would like it if they were in the airplane and the LSO had done nothing. ◄

More on "In-Close" Waveoffs

The subject of in-close waveoff technique is very controversial, not only among carrier aviators but among LSOs as well. Since LCDR Webb's views are not universally accepted, and to avoid the inference that this is **the** *required technique for waveoffs, some additional viewpoints and comments on the subject are presented. – Ed.*

LCDR Phil Schuyler, Naval Safety Center A-6 Analyst and qualified LSO:

"Everyone will agree that an overrotation on a waveoff increases the probability of an inflight engagement, and no one will say that it is easy to keep the aircraft from overrotating while seeking optimum angle-of-attack on a waveoff. However, my concern is less with an inflight engagement than with a ramp strike, so I contend the best technique is to rotate to optimum angle-of-attack on waveoffs. If I wave off a pilot for a dangerous pass, I want him maximizing his ability to stop the aircraft sink rate. And in all cases, this will require a nose movement (but not an overrotation). Furthermore, rotating the nose to optimum AOA in most aircraft is not going to increase the attitude significantly. Therefore, if an inflight does occur, the aircraft is in an attitude close to normal and damage should not be major. Even then, a collapsed nose strut is far superior to a fuselage wrapped around the ramp. I say, when a waveoff is given – in-close or wherever – the pilot should go to optimum AOA and maintain optimum AOA until he is safely established in his climb. The most important point is that there should be only one waveoff technique for each aircraft so that the pilot does not have to determine when he is 'in-close' and thus must use a different technique."

LCDR Cliff Scholl, AIRLANT LSO

"Basically, I agree with what LCDR Webb is saying. What I don't agree with is someone drawing the inference that there should be two different techniques, one for in-close waveoffs, another elsewhere. I don't believe George meant to imply that. The pilot should not be expected to determine when he is in-close; therefore, he need have only one waveoff 'technique.' This 'technique' will be determined by the attitude the aircraft is in when the waveoff is issued, not its position on the glide slope. I think, in conjunction with this, a misunderstanding of the waveoff philosophy is beginning to surface. In the verbiage attendant with the AARs on late waveoffs/inflight engagements, I've read everything from 'using the waveoff lights to get full power' to working a poor pass because 'the pilot was a good stick/LSO,' inferring that he could handle a waveoff in-close. I, personally, am doing all I can to get the words 'LATE' and 'WAVEOFF' divorced from each other. The maneuver is a waveoff. Where it occurs is of little consequence.

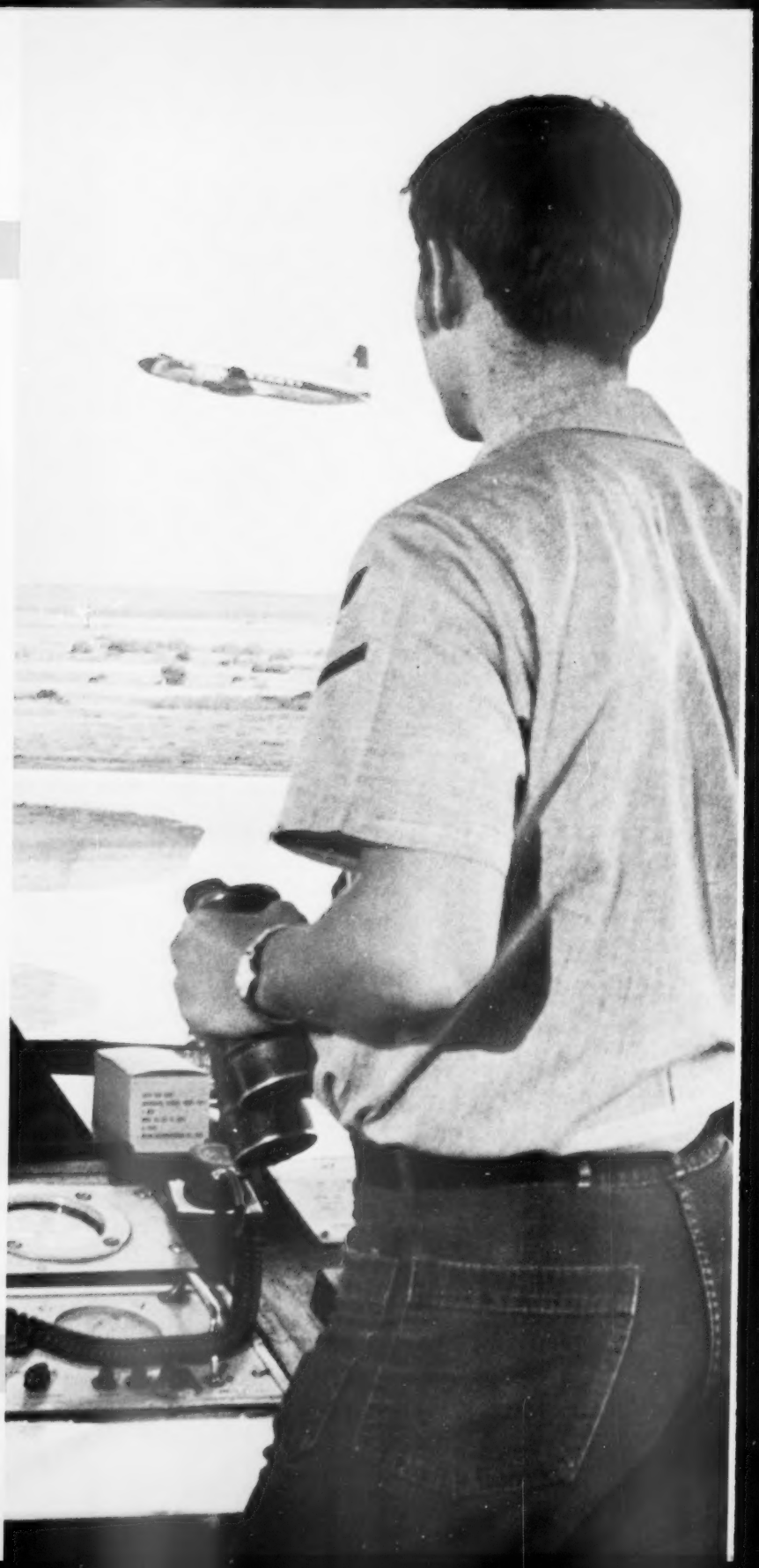
"Most of the controversy surrounding this discussion is clouded by the degree of disaster which might be anticipated when a waveoff is required late in an approach. There are three cardinal possibilities: 1) nothing, 2) inflight engagement, and 3) ramp strike. The first is the best and no more need be said. The last is ultimate disaster and discussions of techniques necessary to optimize a ramp strike are moot. The middle ground is the inflight engagement or unintentional landing – the point being that both are landings, and as such, the aircraft should be in the landing attitude in order to minimize potential damage."

LCDR Terry Ede, VF-43 Instructor Pilot and experienced aviator:

"The important thing to remember on in-close waveoffs is that every aircraft is different, and optimum waveoff technique will vary. Therefore, from a pilot's standpoint, you have to know what technique will maximize waveoff capability, and then practice this technique during your FCLP periods. Your aircraft's NATOPS manual is the starting point for determining what this technique is, but in the final analysis, the vagueness of the typical NATOPS manual with regard to waveoff technique requires you to experiment and talk to experienced LSOs in order to find the best procedure for your type aircraft. Then, fly your aircraft with a centered ball all the way to touchdown, so any late waveoff you get is going to be the fault of the LSO or the flight deck rather than you."

CONTROL AIRCRAFT OR SCRAPE PAINT?

By AC2 L. F. Press
USS CORAL SEA



THROUGHOUT the years since the beginning of Naval Aviation, there have been accidents and incidents. Some were due to pilot error, some to equipment malfunction, and some due to air controller error. Although the last is a small minority, it is still a subject of great concern. Most naval aviators are at least familiar with the functions of the ATC facility and the work of the controllers. However, they, along with most other people not directly involved, fail to realize the amount of training, professionalism, and actual experience necessary to be an air traffic controller. Controlling and coordinating air traffic takes skill and reflex, as does piloting an aircraft.

In many instances, a controller is expected to safely direct the movement of as many as 10 to 20 aircraft – aircraft of varying sizes and speed. He must know or be familiar with the many characteristics of different aircraft, such as the airspace they will require to make a turn, the amount of fuel they use at different speeds and altitudes, and many other characteristics. Without this knowledge, the movement of air traffic would become slow and inefficient.

The schools that air controllers must attend are fine; they teach rules, phraseology, and give a basic understanding of air traffic control. But in the final analysis, experience is not only the best teacher, it is the *only* teacher. Many hours of actual control, supervised by qualified instructors, are required to give a prospective controller the skill and knowledge that will be required of him. This skill and knowledge may save the life of a pilot and millions of dollars worth of aircraft.

Training and requalification must be accomplished every time a controller is transferred to a new duty station. Every airport has different operating procedures, as well as different topography. A controller must know the area well, such as roads, mountains, rivers, and airways. Also, each facility has different equipment, and constant study is needed to keep a controller up to date with Federal and local changes in procedure.

Just as a pilot must fly often to stay current, a controller must control to remain proficient. I am currently stationed aboard a Midway class carrier in drydock on the west coast. My duties consist of cleaning, scraping, and mainly staying out of sight. I have not controlled any aircraft since June 1975 and probably will not until July 1976 or later. It is fine to say that I can study and even go to a one-week refresher course, but what about experience? I was qualified as a controller on our last cruise and will be expected to sit down cold and control up to 16 or more aircraft with living, breathing pilots when once again underway. I will also be expected to train someone else to do the same.

Just as an air wing pilot needs practice, so do I. No pilot would be expected to land on a carrier after not flying for over a year, so why should I be expected to control him and be responsible for him and his aircraft? A solution, you ask? Detach CATCC personnel from the ship's company (like the air wing) and send us to a naval air station to work and stay proficient. Maybe the pilots have confidence in me, but after even 2 or 3 months of inactivity, *I don't!*

Conversation with other air operations department heads reveals that what you suggest is what often takes place. However, not all controllers can be sent TAD for the entire yard period. The ship's force has much work to do while in the yard, and even though the work is remote from the AC rating, lots of people are needed to get the work done. In reality, just about everyone works out of his rate while in the shipyard. At various times, controllers can be sent TAD to nearby air stations to keep their hand in. Some CATCC officers even send their controllers to the Fleet Combat Direction Systems Support Activity, San Diego, to keep the ship's team up to speed. This seems like the best approach to the problem. – Ed. ◄

Another big vote for

By CAPT I. Patch
OPNAV (OP-09B3)

COLONEL Bob Walker's article, "NATOPS and Safety," reprinted in the APR '75 APPROACH, causes me to offer a few comparisons of the old days in contrast with contemporary aviation.

My experiences, when compared with Col Walker's, are remarkably similar. My first squadron was composed mostly of experienced aviators. Eight years flying experience was about average. During the 3 years I was in that squadron, we had 36 major accidents and suffered 16 fatalities. Although the squadron had many good aviators, the most difficult missions were not always successfully completed. Slowly, the squadron began documenting the limiting factors, and as a result, began raising the altitudes downwind, establishing positive preflight inspection procedures and better checkoff lists. Our doctrine for survival slowly modified the squadron's standing operating procedures, and the accident rate dropped dramatically.

After that first squadron tour, I went to the Training Command as an instructor. During that time, under the strong insistence of ADM Bob Pirie, the collection of knowledge from the many squadrons became part of the NATOPS manuals written for each aircraft model. I subsequently served two additional squadron tours. During this time we lost no aircraft, and, more importantly, no lives were lost during those tours. I might add that my last two WESTPAC cruises were fatality-free for the entire ship.

What a difference 20 years makes! We don't need to reexperience the type of accidents I recall from that first

NATOPS

tour: wingfold on takeoff, complete electrical failure at night (happened twice with no vacuum instruments in aircraft), flew into water out of upwind turn (happened twice), flew into ground during FMLP, engine failure on takeoff (on test flight following dead stick landing), engine failure on cat shot (happened twice), stalled out on approach, taxiing aircraft lost control – collided with aircraft in warmup area, hard shipboard landings (four times), unintentional shipboard wheels-up landing, engine failure in the groove, aborted takeoff (skidded over cliff), intentional one-wheel-down landing.

I've only listed half of the accidents to illustrate the problems we had. One must remember that our pilots were experienced aviators, but they were flying without the benefit of a NATOPS program. The "aborted takeoff" (skidded over cliff) accident occurred when takeoff was attempted to meet an ASW commitment even though the wind was 90 degrees port from the runway heading at 30 knots. Today, with the benefit of NATOPS, the smart pilot, realizing that the maximum crosswind component for takeoff is, say, 25 knots, would not risk it. In the days before NATOPS, takeoff would be attempted. Some would make it and some would not.

There is no substitute for a program that requires professionalism of the highest order. The NATOPS safety programs and squadron readiness go hand-in-glove. Supporting the program is a sure way to continue the accident rate downward.

Anymouse

"Going Above Glidepath . . . "

A FLIGHT of two F-4Js were returning to MCAS Homebase after a night intercept mission. After contacting approach control, they requested radar vectors to a section GCA. They were cleared to descend to 4000 feet. Since lead had engine problems, he elected to land on the first approach, with the wingman splitting off on final to a missed approach.

These intentions were relayed to GCA and acknowledged. At 12 miles, the controller called, "Perform landing check." Lead informed the controller that they were still level at 4000 feet and, being familiar with local procedures, requested 1500 feet. They were cleared as requested and called "level at 1500 . . . landing checks complete."

Nearing the glide slope, the controller was informed that the wingman was on the port side. He rogered the call and transmitted, "Approaching glide slope . . . no need to acknowledge further transmissions . . . above glide slope . . . going further above glide slope." The flight established itself on the glide slope after this colorful start, and the wingman took separation as briefed. The final controller saw the split on his scope, reported this to the flight, and then asked lead if he was "the one closest to the centerline." Lead answered that he was. He was cleared to land, and the wingman was cleared for a low approach. The controller then locked his key down, making two-way communication impossible. Neither aircraft could see the ball because the datum lights were turned up too bright – much too bright!

At one-half mile, the controller said, "Above glide slope . . . going further above glide slope . . . well above glide slope."

As it turned out, lead actually found himself *WELL BELOW* glide slope with insistence from the controller that he was well above. Had he followed the controller's directions, he would have flown smartly into the deck, well short of the runway.

What happened is that the controller focused his attention on the wingman who was executing a missed approach!

First of all, this situation could have been avoided if the controller had focused his attention on the proper aircraft. Had he not had his key locked down, lead could have informed him that he was looking at the wrong aircraft and that the datum lights were too bright. It would also have helped if the mirror datum lights had been adjusted properly (after-the-fact questions revealed that the intensity of the ball and datum lights are controlled by the same rheostat – unable to turn ball up and datums down).

Perhaps, this may have been what happened to some of those jocks who "mysteriously flew into the deck."

GCAmouse

The GCA controller used nonstandard procedures from the

The purpose of Anymouse (anonymous) Reports is to help prevent or overcome dangerous situations. They are submitted by Naval and Marine Corps aviation personnel who have had hazardous or unsafe aviation experiences. These reports need not be signed. Self-mailing forms for writing Anymouse Reports are available in readyrooms and line shacks. All reports are considered for appropriate action.

REPORT AN INCIDENT,
PREVENT AN ACCIDENT

start of the approach. His action in keying the mike on final approach, however, is a recognized, standard procedure.

A few words need to be said about the wingman's position during an approach. If it's IMC, the wingman should be in a parade position, at least until the field is sighted. In this case, only one target will be viewed by the controller. If it's VMC, the wingman can still fly a parade position. If, however, the wingman's intention is to act as a chase plane and he separates from the leader, he should assume a position 500 feet aft and 500 feet to either side of the lead plane (reference OPNAVINST 3710.7G, para 4-37). This will result in two targets on the radarscope and will lessen the chances of the controller issuing instructions to the wrong bird.

Finally, NAVFAC publication P-80 sets forth specifications for permanent mirror installations providing for **separate** *remote controls for datum and source lights. It is known, however, that a few installations do not meet this standard. If this is the case at your base, bug the Ops officer. He can start the ball rolling to have this safety of flight item corrected.*

Makes You Wonder

I WAS sitting in the readyroom one hour prior to launch, fully briefed and ready to go, when my bird was called by maintenance control as "up and ready." My right seater and I put on our flight gear and proceeded to maintenance control to check the yellow sheets.

The yellow sheets revealed nothing unusual; everything had been signed off by all the shops and the plane captain. Off to the bird we went, thinking that things were really going smoothly and that we would be able to launch on time.

How wrong can one misinformed aircrew be? As we approached the trusty (but not really ready) bird, a maintenance controller came running out to catch us. We were then informed that someone had forgotten to arm the racks. (All stations were configured with external stores.) I wondered what else had been left undone.

Wondermouse

Down Collective

REMEMBER the last time the ASO screamed and hollered about getting a flap sewn over the pen and pencil pockets on the old zoom bag and keeping the others all zippered up? Well, here's a "gotcha" I'll bet you didn't believe would getcha.

Would you believe that a flashlight stuffed into the left shin pocket of a flight suit could cause a helo to become suddenly, unexpectedly, and very inopportunely, airborne? I didn't either.

One bright, sunny day it sure did. While making a right turn during taxi, the flashlight came up under the collective switchbox, and things got a bit hairy for a couple of seconds. The incident occurred in an H-2, but if you doubt it, try it on your own brand of helo. From now on, my flashlight is going to be carried in the right shin pocket.

Flashlightmouse

For the Wife and Kids

THIS intrepid aviator, not having participated in carrier ops in over a month, manned his *Corsair II* for an afternoon launch. Because of the layoff, I decided to perform an extra special preflight for the wife and kids.

Lucky for me! Upon preflight of the ESCAPAC IC-2 ejection seat, I found that the parachute arming lanyard had not been attached to the emergency harness release handle. It seems that the AME had forgotten to reset the lanyard, and the CDI didn't catch it. A flight deck troubleshooter was notified, and he corrected the discrepancy. No big deal.

The launch was uneventful, until I attempted to raise the flaps and found that the trailing edge flaps would not retract; they could be "beeped" up, however. Again, no big deal. But what if . . . they had been split flaps . . . the aircraft could not be controlled . . . I had to eject . . . the arming lanyard had not been attached, and . . . now *that's* a big deal.

This is one aviator who does a thorough preflight every hop!

Preflightmouse

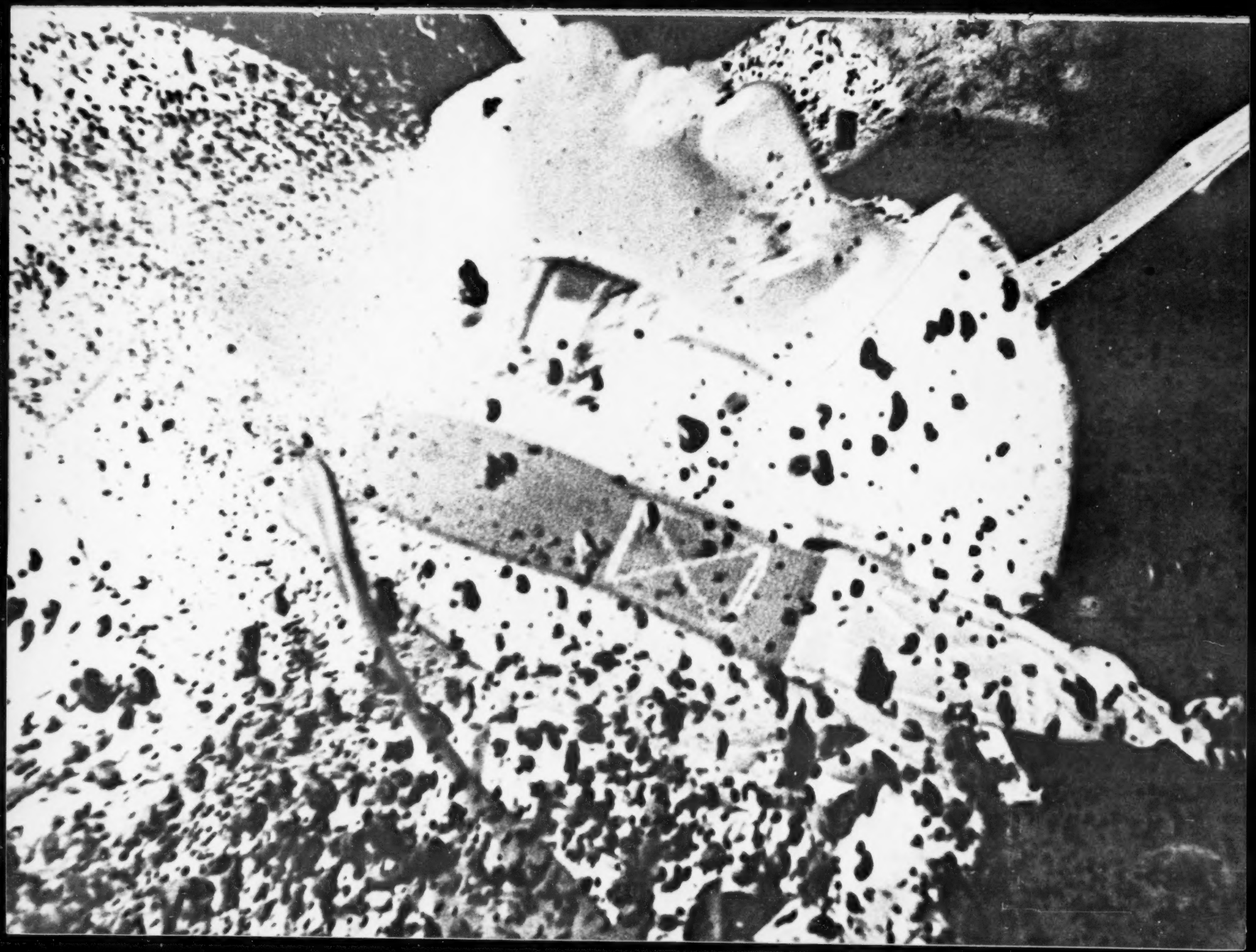
A POINT OF VIEW

By LT Mariner G. Cox
HSL-34

THE telephone rang at 0300 and the Assistant Squadron Duty Officer was rudely snatched from his lethargy by the hastily mumbled words which poured inexorably from the receiver: "Your aircraft aboard USS SHIP was lost at sea at 0100 this morning . . . it broke up on impact and sank immediately . . . two of the crew were picked up . . . two are missing . . . cause unknown at this time." More telephone calls quickly follow, and soon the entire squadron was awake, trying to find out what happened, trying to find out why it happened, who's OK, and who's missing. Many wondered why it had to happen to us.

The long, sad days that followed made us aware of our loss. Two of our friends were gone, never to return; two wives in our midst were without husbands; children were without fathers. Even today, months later, the wardroom seems quiet and empty as I sit alone and sip my lukewarm coffee. Reminiscing, it all comes back to me almost too vividly to bear. I can hear plainly the angry sound of the engines' deceleration as the rotors hit the surface. I remember the violent tumbling, instant vertigo, the cold blast of water in my face, the total blackness. My God, what happened? Then I realized we were in the water . . . which way is up . . . can't breathe . . . got to get out . . . get the belts off . . . open the door . . . pull out . . . swim . . . SWIM!

Those of us who have had an accident and lived to talk about it know one thing which isn't common knowledge. When it happens to you, a little piece of yourself is lost that you never get back. You no longer see yourself as the greatest naval aviator the Training Command ever produced. Oh, you know you're still



pretty hot, but you also know you're fallible. It takes a long time to see some reason why it happened to you instead of "the other guy." It took me a good number of years and thousands of barbs from friends such as, "Our special pilot is flying today. Better get the periscope rigged on No. 34."

I can't forget the safety officer either (he never forgets me whenever water is mentioned), but then I guess we're all safety officers, aren't we? Those of us with the experience, be it good or bad, have an obligation to try to pass along that experience to the young lads with the unsoiled logbooks and that special hunger for flight time. Let's face it, one real problem with fatal accidents is that the experience that might prevent the next accident disappears with the aircrew who didn't make it. So I finally learned to stuff my pride and respond to questions, in the hope that the facts as I learned them might help someone else.

In my accident, immediate egress from the aircraft after impact was the only real problem. We went down in shallow water, a mile off the beach, at dusk. Once clear of the helicopter, I wasn't required to make any great ascent, nor did I have to tread water for any length of time. They say that the helicopter missed crushing me by inches as it rolled on its side, so rapid egress is probably what saved my life. I'm convinced that I got out safely because I was extremely familiar with my type helicopter and had been trained in underwater egress from an inverted cockpit after disorientation.

When I found myself underwater in total darkness and inverted in the straps, my first thought after initial panic was Dilbert Dunker. That's right. Wait for the bubbles to clear (hell, it's pitch black, what bubbles?). Unstrap and open the door. Push yourself out. Swim. Yes, hard as it was to believe at the time, that lost weekend with the long flight to Quonset Point to ride the mechanical terror saved my life when the chips were down. Dilbert Dunker training was the best thing I ever did. Because the egress procedure was familiar, I did it right – the first time.

Now, several years later, interest in getting the aircrew out of upside-down helos is on the front burner again. Although it never was forgotten, it had been assigned a low priority. Once again, though, in view of recent fatalities attributed to failure of personal flotation devices, it has become a hot item. Nevertheless, we have to realize that "Buck Rogers" equipment is expensive and that a choice of liferafts or fuel is not an uncommon dilemma in a time of fiscal crisis. So, more often than not, we're left with the promise of things to come and the order to use what we now have to the maximum. And I don't think we are doing all we can with what we have. For example, 3 years between qualifications in underwater egress is just too long. Shortages of required equipment are not acceptable, and a lack of knowledge of the equipment we have is utterly foolish.

I know it's only one man's opinion, but it appears that survival depends a great deal on the individual – how well he trains, how well he knows his equipment and its limitations, and how dedicated he is to being as *well prepared* for any emergency as he can be.

So, I use what I've got. I carry my survival gear with me when I fly, and I know how to use it. I keep my qualifications up to date, not because the operations officer makes me, but because my life depends on it. And who knows? Maybe an ensign or jaygee will follow my example or listen to my hairy tale and avoid that moment of terror I experienced. If luck isn't with him, maybe his training and equipment will see him through, and the wardroom won't lament his untimely departure.

Being prepared isn't just the mark of a Boy Scout; it is the mark of a true **professional.**

A new helo underwater escape training device has been developed at NATDC Orlando and should be in Fleet service shortly. This should greatly improve training in this area and, hopefully, save some lives. – Ed. ◄

A Quickie

A senior officer in the squadron was due to depart at 0800 but showed up at 0615 – considerably ahead of time. His helo wasn't ready; it hadn't been preflighted. He was really ticked off and refused to wait. So, he strapped himself in, fired up, and took off all by himself.

Such irresponsible action is hard to understand. The best that could be done for him is for the CO to ground him immediately, have a little chat, and then send him to the duty shrink for a series of *tete-a-tetes* about what must be his premature death wish.

The "Brakes" of Naval Air

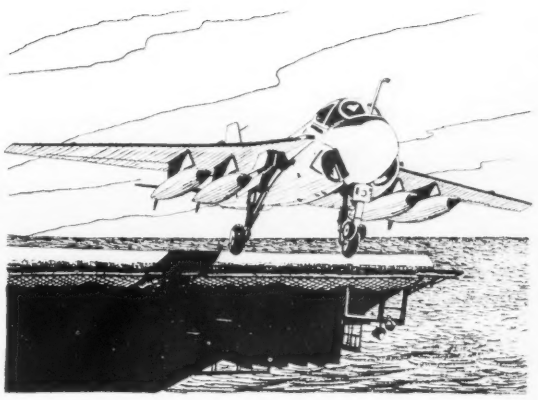
THE pilot of a KA-6D went to military rated thrust as tension was taken on the No. 4 catapult. After his control checks, he turned to the B/N and inquired if he was ready to launch. Receiving an affirmative reply, the pilot saluted the cat officer and was launched. Thereafter, things turned to worms in a hurry. The initial stroke of the catapult was normal, but after 2/3 of the deck run, the pilot noted a wobbling of the nose and both crewmembers sensed a marked deceleration. The pilot had an overwhelming feeling that the aircraft was not going to fly, and the B/N felt that the deck edge was approaching slower than expected.

The aircraft reached the deck edge 3.2 seconds after initiation of the catapult stroke. Upon clearing the deck, the aircraft settled until rotation. At that time, the top of the canopy was approximately level with the flight deck, indicating a loss of about 15 feet of altitude. The pilot, believing the situation was beyond control, ejected 1.8 seconds after the aircraft cleared the deck, followed 1.9 seconds later by the B/N. The pilot ejected in approximately a 10-degree noseup, wings-level attitude and the B/N in a 10-degree right wing down attitude.

Following the ejections, the aircraft entered a gentle, climbing right turn, continuing to roll right. It then impacted the water in a 60-degree right wing down attitude, 500 yards ahead of the ship. The crewmen were rescued unharmed.

Postaccident investigation revealed that the parking brakes were set ON at the time of the launch, precipitating the accident. This was, of course, an error on the part of the flightcrew, but it is mitigated somewhat by the events which preceded the launch. Due to a lack of understanding in the brief, the pilot was not launched in the sequence he was expecting. Moreover, after the pilot had taxied into position on the catapult, the director signalled the pilot that there would be a 10-minute delay prior to launch. The pilot held the brakes for about 5 minutes, then set the parking brake. Thereafter, he was given the "fold wings" signal to allow clearance for another aircraft. He raised his flaps and slats, but before he could fold his wings, the other aircraft successfully cleared the KA-6D. The pilot then lowered his flaps and slats and completed the takeoff checklist again. He reset his parking brake and made a mental note that it would have to be released before launch.

The crew then felt tension being taken and looked to see the director giving the "off brakes/take tension"



signal. Unfortunately, in the press of the moment, the pilot forgot to release the parking brake. The aircraft was then launched with parking brake set.

Nevertheless, this did not ordain the accident. The fact is that the aircraft left the deck with an end speed of 108 knots, plus a wind speed over the deck of 25 knots. Since the aircraft was not fully fueled, this resulted in 14 knots over minimum flying speed. Moreover, the pilot made no attempt to raise the landing gear or jettison 11,000 pounds of external stores, as he was convinced, prior to leaving the deck, that the situation was hopeless. A scan of the instruments might have convinced the pilot otherwise. However, neither the pilot nor the B/N scanned the instruments during the launch. The CO in his endorsement to the mishap report noted that the GRU-7 ejection seat headrest, as currently installed, makes it difficult for the pilot to scan his instruments during the acceleration of the cat stroke. He recommended early incorporation of ECP EA-6D-172 or other suitable modification to provide a headrest extension. According to COMNAVAIRLANT, NAVAIRSYSCOM has initiated action to provide a more suitable headrest for the aircraft.

An important factor in this mishap was the interruption of the normal sequence of events. This is a well known accident cause, particularly in wheels-up landings. Aircrews must therefore discipline themselves to be especially alert and cautious whenever they encounter delays or interruptions in the normal sequence of events.

Don't count on everything going exactly according to plan. ◄

Approaches are for navigators, too.

By ENS S. W. Braisted
VQ-4 NATOPS Navigator Evaluator

THE navigator evaluator's first law of aero/hydrodynamics is: "Aircraft and ships are especially designed to operate within their respective fluid environments – the gaseous and the liquid. Transitions from the normal operating medium to another medium in any other than a carefully executed manner, at specifically designated portions of the interface, will result in undue compression and deformation of the vessel's structure and any contained semifluid objects, i.e., crewmembers." Or, in other words, "You maka mistake, you busta your a__."

During the approach phase of a flight, navigators have very little to do beyond cleaning up charts and logs and keeping seat cushions firmly in place. At this critical time, when the aircraft is nearing the end of the flight, it is the clear duty of the navigator to invest careful effort in the preservation of that portion of his anatomy which compresses the seat cushion.

Remember, those poor fools up forward are extremely busy with a multitude of details and duties, especially when the world starts going to worms in a hurry. All NFOs who pass through VT-10 are trained in approach procedures of various types. While the training seems primarily for the benefit of future RIOs and B/Ns who will be performing second-pilot duties in tactical

Through the years, one community which has been slighted by too few APPROACH articles is the NFO. This has not been intentional but may be attributed to lack of knowledge (staff writers are retired naval aviators) and the paucity of articles submitted by Fleet NFOs. It's a pleasure to present this article.

jets, the multiengine navigator is also expected to back up his pilots. An extra set of approach plates can provide far more than supplementary reading material for bored ACOs and TACCOs.

When the VQ-4 navigator responds, "No questions, Nav," to the approach checklist following the crew brief, he is signifying that he understands the approach and backup, the missed approach procedures, all altitude restrictions, and considers himself fully briefed. Should there be any question or doubt as to the contents of the brief, "no questions" is obviously an inappropriate response. While listening to the pilot's brief, the navigator should have been listening for and verifying all altitudes, inbound/outbound courses, decision height, or minimum descent altitude. He should be fully aware of terrain, obstructions, sector altitudes, minimum safe and emergency safe altitudes, and minimum enroute altitudes on airways feeding the facility. In short, he should *know* the approach and the applicable missed approach points and procedures.

Once the approach has commenced, he should monitor all headings and altitudes, using his BDHIs, all available navaid displays, and altimeter to maintain a constant awareness of the aircraft's position with respect to the airfield and ground below. UHF and VHF

communications between aircrew and ground controllers should be monitored and any clearance deviations brought to the attention of the pilots. On GCAs, where the tendency can exist to follow controllers blindly, instructions should be examined critically, remembering that controllers are as *fallible* as pilots and navigators.

The navigator's role is usually passive, *until something looks wrong!* All crewmembers are tired at the end of a 10- to 14-hour flight, and mistakes not only can – but *will* happen. If and when something looks irregular or questionable, immediately call it to the pilot's attention. Any pilot who feels that a precautionary call is out of place is setting his crew up for their last flight. Many navigators are junior, and if they have been chewed out previously for an imagined insult to their pilot's dignity, they may be gun-shy and keep their mouths shut the next (and last) time. However, if it appears that you're inadvertently busting an altitude, better to make noises then and live to hash it out on the deck (or at the BOQ bar) than to keep your mouth shut and be discussing it enroute to the Pearly Gates or the alternate.

Navigators should also be listening for altimeter changes. If going into a European field, check the QNH against the QFE. If the setting was given in millibars, check the conversion. The table in the IFR Supplement can be misleading. Be also aware of transition altitudes and required altitude-passing calls, checking with your pilots on exactly how they wish to be backed on altitude calls.

All crewmembers are supposed to be part of a well-coordinated professional team, and part of that professionalism is the knowledge and ability which provides an extra margin of safety, especially in tight or dangerous situations. Remember, any approach is potentially dangerous and becomes rapidly more so with the addition of distractions such as emergencies and extra radio work. The extra set of eyes and ears backed with a functioning brain often makes the difference between safety and tragedy.

Navigators, be *knowledgeable, well briefed, aware,* and *alert.*

The cushion compressor you save may be your own.

Bravo Zulu

LT Stanley K. Gryde, plane commander, and his crew of 14 were on an overwater operational mission in a P-3 *Orion.* Altitude was 350 feet, speed 250 knots, and gross weight 114,000 pounds, when the prop pump No. 1 light on the No. 1 engine illuminated. No associated overspeed was experienced. An annunciator lights check indicated the prop pump No. 2 light was functioning properly, so the No. 1 engine was secured with the E-handle.

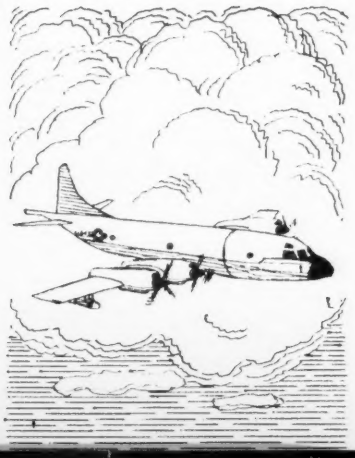
Surprisingly, the prop failed to feather, indicating 70 percent RPM at 240 knots. The aircraft was immediately slowed by climbing, and the prop-fails-to-feather procedure was completed to no avail. The aux pump and prop feather control circuit breakers were cycled, and the prop-fails-to-feather procedure was again attempted without success.

Fluid was seen coming from the prop dome, and the aux pump circuit breaker was pulled to prevent the pump from overheating. Engine instruments indicated decouple had occurred (engine oil pressure 4 psi). The aircraft was turned toward homebase, and a 160-knot climb to 2000 feet was commenced. During the climb, the RPM gradually increased to 100 percent.

Ten minutes later, without warning, the No. 1 prop suddenly oversped to greater than gage limit (120 percent plus), and was accompanied by vibrations and a loud noise. The PPC slowed the aircraft to reduce the overspeed, to avoid separation of the prop from the aircraft, and to also lower the noise level. Flight at 130 knots with approach flaps resulted in an RPM reduction, but lateral control was unsatisfactory and noise level was still excessively high. Therefore, land flaps were selected and the aircraft slowed to 120 knots.

Maximum power was required to keep the rate of descent at a minimum in this configuration. At this power setting, the pilots were unable to maintain directional control with full right aileron and full right rudder held by both pilots, but at least the aircraft's tendency to roll was decreased. Prop RPM audibly decreased, but gage indications remained in excess of 120 percent. After considering an impending ditching into 8-11-foot seas with 25 knots of wind and directional control problems, the PPC gave the order to prepare for bailout.

The aircraft continued in a slight right turn, and attempts to maintain heading caused an increase in the rate of descent. The plane commander accepted the directional control problem in order to minimize the rate of descent and ordered jettisoning of all ASW stores, including pyrotechnics and ordnance, resulting in a weight reduction of about 2500 pounds. The plane commander next prepared to jettison electronic gear to further reduce aircraft gross weight. At 400 feet, level flight was attained. Shortly thereafter, power on No. 4 engine was reduced slightly, which allowed a constant heading to be maintained although a right turn was not possible.



After about 30 minutes, a gradual climb to 1000 feet was commenced. Airspeed was allowed to slowly increase to 130 knots. This increase in airspeed and another slight reduction on the No. 4 engine allowed a right turn to be made, and the PPC proceeded direct to homebase. Wind, terrain clearance, runway dimensions, and crash equipment were all considered in the selection of field and runway. Flight characteristics in the waveoff configuration were checked 20 miles from the field. A waveoff was feasible.

The landing gear was lowered 2 miles from the field. With a landing weight of 95,000 pounds, 1.3 V_S, speed was 124 knots, and with the reduction of power for landing, balanced flight was finally attained. Touchdown was normal, and directional control during the rollout was not significantly affected by the windmilling prop. The aircraft taxied off the runway with one-third of the runway remaining, and as the aircraft entered the taxiway, the No. 1 prop finally stopped turning.

The most probable cause of this incident was fluid loss and internal pressure leakage in the No. 1 prop dome. The cause of the failure of the prop to pitchlock is unknown, but investigation continues. Factory representatives estimate that the prop overspeed was in excess of 160 percent. This is, without question, a very hazardous condition. Due to the skill, judgement, and resolve of LT Gryde and his crew, one P-3 and 14 personnel happily remain in the Navy's inventory. Good show!

Don't jump to conclusions!

A SINGLE TA-4J departed Dobbins AFB on a day cross-country flight to Dyess AFB. The distance was calculated at 789 nm with winds at FL280 forecast to be 270/115 from Georgia to northeast Texas and decreasing to 250/95 from northeast Texas to Dyess AFB, Abilene.

Takeoff, climbout, and initial cruise were normal. VMC prevailed (visibility 50 plus and tops at about 10,000 solid). Destination weather was forecast to be 1000 scattered, 10,000 broken, 10 miles visibility. The alternate, Carswell AFB, was forecast to be 4000 broken and 10.

Sixty miles east of Texarkana TACAN, the pilot contacted Metro for the 1600Z observation (Dyess) and 1730Z forecast (ETA). Metro reported Dyess 1000 scattered, 10 miles, forecast to be clear at 1730Z.

Upon arrival at Greater Southwest VORTAC, Dallas had a scattered layer at 10,000 with weather to the west clear and 25 miles. Fuel remaining was 1900 pounds with 2000 pounds/hour fuel flow, groundspeed 6 miles/minute at 144 miles from ABI VORTAC. At 110 DME, Center cleared the pilot to descend to FL240. Fuel at this time read 1400 pounds with no new groundspeed check. Due to fuel level, the pilot elected to remain at altitude and was cleared to descend at pilot's discretion. Fuel flow remained set at 2000 pounds per hour, and touchdown fuel was calculated at 900 pounds, using 6 miles per minute groundspeed.

At about 80 miles, the pilot was cleared to 17,000 feet at his discretion but remained at altitude with about 1200 pounds, informing Center that he would be low on fuel and would do an idle descent into Dyess AFB. At 60 nm, the pilot reported commencing an idle descent out of FL280, calling "emergency fuel" at this time. During this descent, 200 KIAS was maintained with a groundspeed of about 4 miles per minute. This descent was stopped twice for a short period (1 to 2 minutes) at

17,000 and 10,000. The descent then continued with vectors direct Dyess (5 degrees right of previous heading). At 35 DME, 5500 feet MSL (4500 feet AGL), fuel was 500 pounds. Approach Control informed the pilot that his present vector would take him over Abilene Municipal (which was 10 miles closer than Dyess). The pilot immediately accepted Abilene Municipal and called, "Field in sight." He was cleared for a visual approach and switched to tower frequency. The aircraft reached 4 miles abeam at 2500 AGL, 400 pounds indicated, and made an uneventful landing, with approximately 350 pounds remaining.

Following this flight, the pilot came up with some conclusions which he passes on to others:

- Don't let good weather lull you into a false sense of security.
- If your bird is low on fuel, get it on deck at the nearest suitable airport, even if you don't know the availability of starting units.
- Watch out for get-home-itis, especially when you know the aircraft is badly needed back home.

These conclusions are worth considering, but the real kicker in this drama occurred after the aircraft was returned to homefield. A little discussion among the troops revealed that this aircraft had been involved in three separate instances where pilots landed with low fuel. None of them had reported these incidents because they figured they had goofed on their fuel planning/management and were too proud to write it up. It turned out, however, that the aircraft had malfunctioning fuel sensing elements and the fuel quantity readings below 3000 pounds were inaccurate. So, the final advice of the squadron ASO is, "Don't be too quick to jump to conclusions, and above all, if something isn't right, report it. It may just save someone else a lot of grief." ◄

AVOIDING MIDAIRS

By LCDR D. J. Aites, USCG

EARLY in the history of aviation, we learned that accidents occur most frequently while the plane is close to the ground – namely, during takeoffs and landings. With this realization in mind, we have been able to minimize the accident potential by devoting a sizable portion of our training to maintaining our proficiency in the landing and takeoff phase. We also learned early in the game that we must be prepared to cope with a mechanical malfunction, so we devote a considerable amount of time to emergency procedures training.

But when was the last time you were scheduled for a recurrent training flight in midair collision avoidance? You probably don't realize it, but that is exactly what you are doing every time you fly. We've all altered our course at one time or another to avoid oncoming traffic, only to see him zip by too close for comfort when it was too late to alter course. Ever think about those that have zipped by without your ever having seen them – nor they, you?

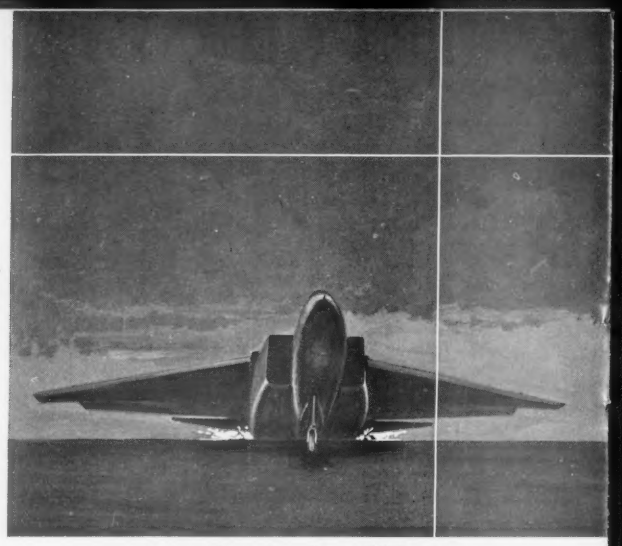
In spite of our progress over the years, there's still much to be done. For example, it really galls me to see John Q. Public fly by in his general aviation airplane with his high-intensity xenon strobes flashing so brightly that you can see them forever, while we have to light a match to see if our rotating beacon is on. We need strobe lights on our aircraft, and hopefully, we'll live long enough to see them. All our efforts in the past have been in vain because of budgetary restraints, but this should be a high priority project.

But there's more that we can and should be doing. In this age of jet aircraft, it isn't uncommon for you to close head-on with another aircraft at over 700 knots. What this means is that once you deduct time for recognition, comprehension, decision, muscular reaction, and throw in a few seconds for aircraft response time – you are within 24 seconds of meeting your Maker during every instant of your life from the time the wheels go into the well until they recontact *terra firma.* How long does it take to find a suitable place to sit down a brimful cup of boiling coffee which you've managed to wrestle away from your crewmen? How long does it take to put mayonnaise on your banana sandwich, which is all you can scrape together out of your box lunch? If you are inventing that sandwich while your copilot is looking up a frequency in the supplement, you'd better eat it in one gulp because that may be all the time you have left.

You must keep an alert lookout at all times!

Adapted from an article in the Jan '75
Coast Guard *Flight Safety Bulletin*

Death at the Ramp



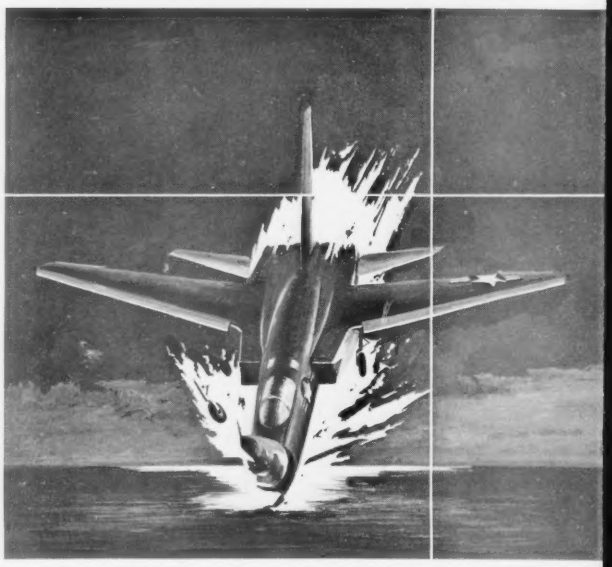
Power! Power! . . . Wave off! Too late.

AN RA-5C *Vigilante* departed Marshal with 7600 pounds of fuel for a night CCA. The night was black and there was no horizon. Complicating things, the deck was moving 3 to 5 feet with a Dutch roll of 2 degrees in addition to the ship's heaving up to 8 feet.

Final "A" communications were acknowledged throughout the approach. CCA was commenced with the call, "Slightly above glidepath, begin descent." The pilot was then given the following three transmissions: "Down and on glidepath, left to final bearing 330"; "Fly heading 325"; "Slightly below glidepath, right three" – all of which were acknowledged. At one mile, CCA transmitted, "Slightly right of course, slightly below glidepath." This transmission was not acknowledged by the pilot.

The wind over the deck was 27 knots, 340 to 360 degrees relative. No ball call or fuel state transmission was made to the LSO. The approach under LSO control commenced with the LSO stating, "OK, *Vig*, paddles contact there; you're looking good," then continued for approximately 20 seconds. During this 20 seconds, the LSO continuously talked to the pilot to assist him in maintaining the aircraft in a stable rate of descent. The radio communications between pilot and LSO are believed to have been satisfactory. This is based on two left lineup corrections the pilot made in response to LSO calls, as well as the fact that the pilot was holding his attitude as directed. Unaccountably, 6 seconds prior to the ramp, the pilot decreased his attitude while simultaneously responding to a slight left lineup correction as directed by the LSO.

The LSO's first indication of impending problems was a change in the relative position of the approach light and wingtip lights. Momentarily thereafter, the approach light changed color from amber to red, indicating a decrease in aircraft attitude. The LSO quickly responded



The aircraft became airborne, but then pitched over violently.

with an attitude call, followed immediately by five power calls. The waveoff lights were activated 3 seconds after the nose drop. Too late! In a nose-high attitude, the aircraft impacted the ramp with the mainmounts, tailhook, and engine nozzles. The aircraft became airborne, then pitched over and contacted the flight deck with such violent force that the forward fuselage area began to disintegrate immediately, and a large fire started in the area of the nose landing gear. The aircraft, on fire, continued up the angle deck on the left mainmount, fuselage, and right wingtip with the structural integrity of the forward fuselage continuing to disintegrate.

The aircraft left the angle in a nose low, right wing down attitude and crashed into the water alongside the

carrier. After the aircraft disappeared from view, a flash, believed to be the RAN's rocket motor, was observed arcing forward and to the left of the port bow. An A-7 and a SH-3 located on the flight deck received minor damage from flying debris. A concentrated SAR effort continued throughout the night into the daylight hours, but only the crewmembers' hardhats and small pieces of debris were recovered.

LSO comments on the approach were: "Nose down in close underlined, settle at the ramp, power in a circle."

The pilot precipitated this accident by failing to maintain proper attitude control in close. However, there was an element of supervisory error at the squadron level because of failure to cancel the flight due to the pilot's lack of current CV landing proficiency, recent performance, and environmental conditions. Part of the CO's endorsement sheds light on these factors:

- The pilot had not met minimum standards for flight hours or CV landings imposed by COMNAVAIRLANTINST C3500.42B.
- The pilot had no recent experience operating from a rolling, pitching, and heaving flight deck at night.
- There was neither moon nor discernible horizon. There was no plane guard destroyer to provide a reference (or artificial horizon) for the LSO.

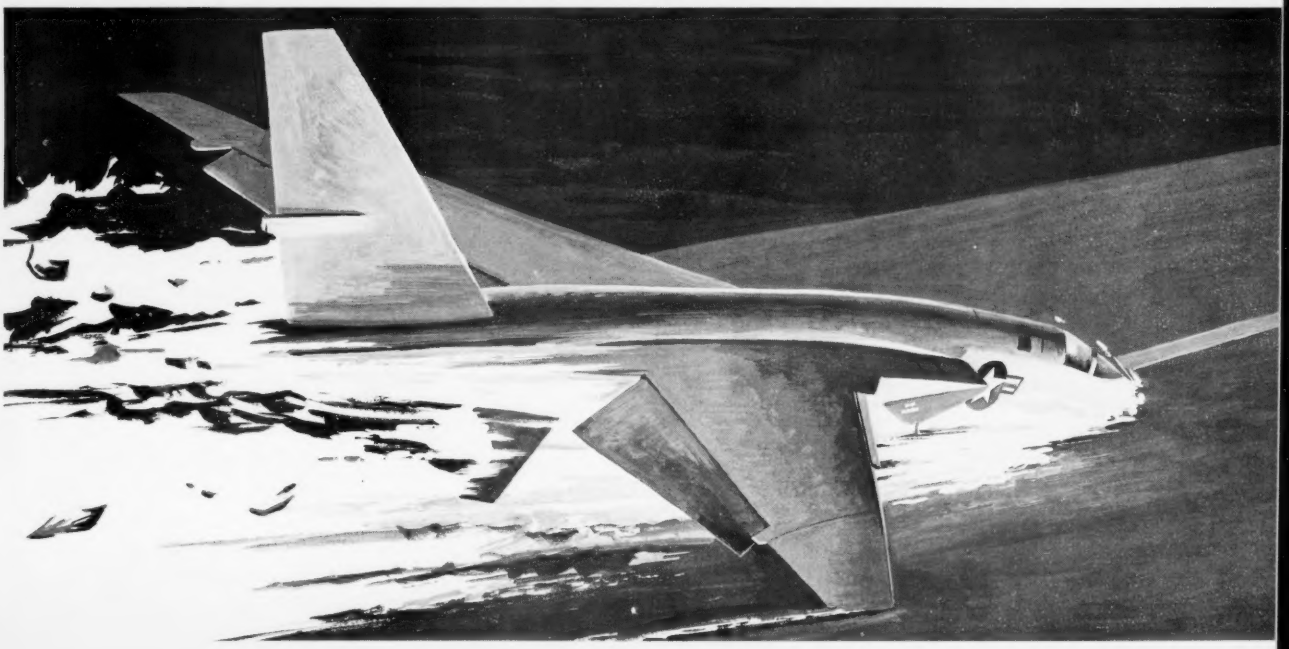
The CO also noted that the conditions for night carrier landings were far from ideal. After the accident, of the nine jet aircraft attempting a CV landing, only three got aboard before the rest were diverted ashore because of the hazardous conditions.

The use (or nonuse) of MOVLAS (Manually Operated Visual Landing Aid System) was considered by the board and endorsers. The board concluded that the decision not to use MOVLAS was not a factor. The CO, however, questioned this and noted that MOVLAS had been used in the successful recovery of 37 aircraft under similar conditions on the previous night. Nevertheless, MOVLAS, or lack of it, was not recorded as a cause factor in this mishap.

It is difficult to suggest a moral to this account, except the obvious ones of "Don't drop your nose in close," and "Be careful on bad nights."

It is apparent, though, that *Vigilante* pilots are faced with problems and circumstances that make their flying more hazardous than their fellow tailhookers. The A-5's high approach speed, large size, limited fuel, and relatively poor power response all combine to give the *Vigi* pilot little margin for error. Compounding this difficulty is the ever-decreasing number of A-5s in the Navy inventory and the increased shorebasing of deployed A-5 squadrons to compensate for the high deck multiples brought about by the CV concept. These factors mean less flight time and fewer carrier landings for *Vigi* crews, in many cases resulting in decreased performance. It becomes imperative, therefore, that all *Vigi* pilots, safety officers, and COs make unusual efforts to compensate, when possible, for these limitations. Also, COs and department heads should ensure that crews are not tasked beyond their current proficiency levels. ◄

The *Vigi* explodes . . . and continues down angle deck, on fire and disintegrating.



A Swinger Blows the Job

THE ops officer's face broke into a big grin as he entered the squadron readyroom at lunchtime. He needed two pilots to swing a compass on one of the birds and within close range he had a dozen or more "volunteers." First, he had to get their attention. Two of 'em were engaged in a hot acey deucy game that had attracted a couple of kibitzers, others were reading NATOPS (spelled *Playboy*), several were shooting the bull by the 80-cup coffeemaker, and two or three more were standing at the blackboard discussing a rough "dead man's curve" someone had diagrammed.

After a long move at the ace-deuce table, the dice were about to be returned to play when Ops hollered: "Hold it a second. Gents, I need two of you to swing 112. The bird and crew are ready to go. It shouldn't take more than 30 minutes. Who wants the job?" There was absolute silence. Ops had been down that road many times, however, so he said, "Shep, how 'bout you and Shark taking it?" Shep replied, "I'd really like to, but I was just leaving for the commissary." Ops said, "OK. How 'bout you Hank? Will you give Shark a hand?" Hank, one of the new guys, allowed as how he'd do it.

The pilots suited up and after a thorough preflight, fired up their SH-3. They taxied to the compass rose and unsuccessfully tried several times to center the port main gear on the rotating disc. In the process of trying to properly position the helo, the director gave the signal to pull chocks. The forward part of the port chock became tightly wedged under the tire. The pilot was signaled to increase collective to reduce weight on the wheels, thus relieving the pressure and permitting the chock to be removed.

The pilot released brakes and eased up collective, but left the cyclic in neutral. The helo climbed the chock, began to roll forward, and the nose pitched down. The pilot reacted too quickly. He jumped on the binders while the senior of the two applied back cyclic. The forward movement stopped, but the nose zapped the concrete and wiped out the forward anticollision light and the ARA-25 antenna housing.

The pilots shut down and looked toward the hangar. Within milliseconds, they saw the XO headed their way. The junior said, "Look, here comes Leo. I'll bet we'll both be in hack by 1300." The senior of the two wondered howinhell the XO had heard so quickly. Shortly thereafter the following conversation ensued:

XO: Who was at the controls?

JO: Iwassirtriedtogetlightonthewheelstoreleasechock-andthedamnosepitcheddown.

SO: As the helo climbed the chock I grabbed a handful of back cyclic too late.

XO: When you're through with the ASO and Ops, come up to my office.

After the XO left the scene, Ops took over and assigned the pilots the responsibility of preparing the rough copy of an abbreviated ground accident report while he and Maintenance got together. The pilots wrote their statements, started the rough report, then proceeded to the XO's office.

XO: Come in. It didn't take you very long.

SO: No, sir. It was kind of cut and dried.

JO: If I had . . .

XO: You look worried.

JO: If I had . . .

SO: We ought to tell . . .

XO: What do you think is the best action to take to prevent this from happening again?

JO: Maybe we could set up better communication procedures with the director. I was pretty sure what he wanted, but not being able to talk to him, I wasn't positive.

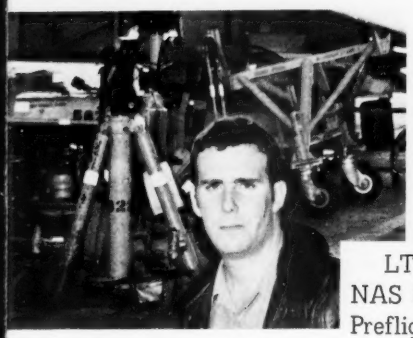
SO: I think we oughta have someone give a lecture on helo aerodynamics and characteristics of flight control movements on the deck.

XO: Those are two good recommendations. I'll see if Ops and Training agree and you'll both prepare a 15-minute lecture to be given at the next APM. That's all.

The two walked out of the XO's office, glad to have kept their skin, and headed for Ops. As they proceeded down the passageway they could hear Ops (who never needed a mike nor a squawk box) expounding on their ancestry, quals, and headwork. It wasn't complimentary.

The following day the report was mailed. The cause was listed as failure of the pilot to coordinate rearward movement of the cyclic with increased collective. This set up a forward thrust vector and when the helo rolled over the chock, a forward pitching moment – aggravated by brake application – was established. NATOPS addresses the problem: "In the event the wheel brakes bind or lock, or the helo is taxied into a hole . . . the nose will pitch down and an immediate liftoff may be required to prevent damage to the aircraft."

The squadron training syllabus now includes basic helo aerodynamics and coordinated flight control movements required for ground evolutions. ◄



HAPPY LANDING

LTJG Charles J. Gusette, a student naval aviator attached to VT-27 at NAS Corpus Christi, was scheduled for his third solo in the T-28 *Trojan.* Preflight and runup checks were normal, and the weather was good. However, a second or two after breaking ground on the takeoff roll, things started to deteriorate rapidly. Smoke and fumes suddenly filled the cockpit and the young pilot could see smoke coming from the cowl flaps. (Later it was discovered that an exhaust stack had separated entirely from its cylinder, allowing flames to pour back across the spark plug leads and around the firewall.)

Reacting instantly, LTJG Gusette used his engine-fire-in-flight procedures to secure the engine, then managed to glide his aircraft to a safe landing on the remaining runway. His problem was not over; he was going much too fast to stop before reaching the end. He executed aborted takeoff procedures, one step of which is to drop the tailhook. As the aircraft passed over the emergency arresting gear near the runway's end, the hook snagged the wire. The *Trojan* was brought to a stop, undamaged, a few feet past the end of the paved surface. A highly professional response to a critical emergency. Good show! ◄

Letters

Re "A Great Rescue"

Portsmouth, VA – I guess a definition of the alltime record for helicopter rescues should be made. For instance, if the definition should fall into the category of a series of flights by a single crew in the same chopper on a single disaster, then the record might have been made by a USCG crew in the Marysville, CA, flood just before Christmas 1955.

The pilots and two crewmen all received the DFC for operating for 24 continuous hours in marginal weather during a complete blackout when the city was inundated. The helo's engine was never shut down, even during manual refueling, as there wasn't any power for starting.

If that isn't some kind of rescue record, I'm badly mistaken. For the sake of accuracy, an evaluation of a "rescue record by a single helicopter" should be closely examined in view of the above.

An Old Coast Guard Chopper Pilot

• There have been so many outstanding rescue missions by helicopter crews over the years that it's hard to claim a record. The VC-8 crew we referred to was a single flight in an H-3, picking up airline passengers from a ditched DC-9.

Can Anyone Help?

NAS Corpus Christi – A short time ago, an Army helicopter pilot told me about a possible solution to the Navy/Marine problem of discharging static electricity prior to commencing any external cargo or rescue sling evolutions. He contended that they key an FM transmitter before arriving in a hover which dissipates the charge. Since we certainly have this FM capability, as well as HF, it would be interesting to validate this, if it's a fact. I've never heard this before and I wonder if anyone else has. Providing we could verify this, it would be worthy of dissemination in *Weekly Summary* or some authoritative publication.

LCDR Don Mohr
SAR Unit

• NAVSAFECEN electronicers can find no basis for this theory. Static electricity and electromagnetic radiation bear no relation to each other. The keying of any transmitter, regardless of the type of modulation used, will not discharge static electricity. However, before we throw this out, we'll broadcast in the blind and see if any of our readers care to comment.

Do It . . . Some More

Grand Prairie, TX – In your AUG '75 issue, pg. 12, appeared a limerick entitled "Navy Pilots Do It Better, but . . . " Enjoyed this very much. Would like to make an addition that I saw recently and also enjoyed very much – "Glider pilots need help getting it up."

We at LTV read every issue of your fine magazine and find most articles timely and well written. Keep up the good work.

J. F. Kaufmann
LTV Field Service

Mayport, FL – Your list of catchy slogans appearing in the AUG '75 issue describing the ways various aviators "do it" was enjoyable, however incomplete – especially in the rotary wing (nonrestricted aviation) area.

HSL-36, the Fleet's newest LAMPS squadron, offers as its apothegm . . . "LAMPS pilots get off their cans and do it in the dark."

LT R. J. Wolfe
ASO, HSL-36

Fireproof Men

MCAS – For years pilots and crews of tactical aircraft have had to wear fireproof flight suits to protect them against flash fires.

One of the most dangerous times for a fire is during hot refueling. Strict NATOPS regulations are followed by the pilots and crews. Radar, high frequency radio, heaters *off*, gloves *on*, sleeves and visors *down*, and ICS communications between the pilots and crew maintained during refueling operations.

Now the problem. Along comes the fuel pit operator – T-shirt, no goggles, dirty dungarees, no sound suppressors, and no gloves. He positions himself next

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: APPROACH Editor, Naval Safety Center, NAS Norfolk, VA 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

to a mass of pipes and valves and turns on the fuel. If a line or valve should rupture and the fuel is ignited from the jet exhaust, a catastrophe can take place.

Why no fireproof suits (Nomex) and gloves for the fuel pit operators? Goggles and sound suppressors are usually required but not often enforced. Let's put these men in fireproof suits and enforce the rules.

Capt M. P. Somers, USMC

Strictly Routine

Annapolis, MD – My headset's off to LT Weiss and AW2 Nicholson for their great article entitled "Strictly Routine" in the OCT '75 APPROACH. The only trick with the P-3 is that there are rarely (serious) problems with it. Pilots and flightcrews become too (and here's *that* word again) complacent with this wonderful machine and all its engines, all those tires, all those radios, and that great weather radar, plus all that expertise (three pilots, two engineers, etc.). Let's appreciate the lower life insurance rates we P-3 drivers get and treat that *Orion* with respect. Let's show the Old Man that we are worthy of his trust – not only the day we fly our PPC check but every day thereafter as well. Not only will he be grateful, but the families of our crewmembers will be grateful as well.

LT John C. Knapp
U.S. Naval Academy

Crew Rest

FPO, San Francisco – Reading your Air Breaks article on P-3 crew rest requirements (SEP '75 APPROACH) and the near-tragedy of almost flying a perfectly good aircraft and crew into the water, really hits close to home. In our deployed P-3 squadron, the prevailing attitude passed down our chain-of-command is that current NATOPS directives concerning crew rest are too lenient and outmoded for the operational tasking required by our deployment commitments.

Operational necessity takes priority over all considerations of proper crew rest. Since the start of deployment, instances of squadron crews flying without minimum crew rest are too numerous to count. There have also been at least two instances where crews have only had 5 hours of crew rest from postflight to preflight (NATOPS minimums are 15 hours from postflight to preflight).

What makes the situation even worse is that patrol plane commanders and mission commanders are categorized as "hackers" or "nonhackers" by the CO relative to how they stand on the crew rest issue. "Hackers" are those PPCs and MCs who follow the command's lead and ignore proper crew rest minimums. "Nonhackers" are those who still believe that the book was written to be followed and who refuse to bend under the pressure.

Under the present conditions, it is only a matter of time before luck runs out and fatigue catches up with one of our crews and someone has to explain to the mishap board why proper crew rest procedures were not followed. This is one "nonhacker" who still believes that no peacetime mission is so important that you have to shortcut procedures and jeopardize safety to accomplish your goals.

Name Withheld

• Scheduling of aircrews is one of the CO's more important management functions. If operational requirements are such that no rested crews are available, the skipper should tell his operational commander that he needs help. *If* he has managed his assets properly, he should get no static from his boss. The true professional knows his limitations as well as his capabilities and tempers the can-do attitude with *good old common sense.*

The crew rest policy in the P-3A/B/C NATOPS manuals is followed by: "Commanding Officers *shall* operate within these requirements . . . " That "shall," as defined in the NATOPS program, means *mandatory*. Authority to waive NATOPS requirements has been delegated to Group/Wing Commanders *and above* by COMNAVAIRLANT and COMNAVAIRPAC. In addition to the violation of NATOPS requirements, scheduling an aircrew for a patrol after only 5 hours of crew rest smacks of poor judgment on three counts. First, a tired crew will not be efficient and the mission will suffer. Second, fatigue significantly derogates the crew's capability to cope with the unexpected. Third, as indicated by the above letter, morale suffers.

One Answer

FPO, San Francisco – The Air Breaks section of the NOV '75 issue of APPROACH recounted a hairy tale in the story, "Who Needs Gages?" I didn't personally experience the following incident but it sounds very similar.

It was early spring and the squadron was flying out of Adak in P-3Bs. One pilot lost all compass systems immediately after takeoff. The clouds were solid up to 8000 feet. He climbed to VFR on top and orbitted for about 4 hours until the weather improved enough for him to descend, with radar assistance, and make a visual landing. Postflight troubleshooting isolated the problem to a relay failure in the forward navigation J-box.

I hope this sheds some light on the glitches described in your November incident.

LCDR Walter C. Fesler, USN
Headquarters United States Forces, Japan

Double-Knit Uniforms

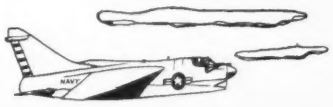
Fleet Post Office – The subject of my letter concerns wearing uniforms made of synthetic fibers while in a temporary flight status.

The background for this idea came from the experience of Navy officers who were involved in a crash of a commercial airliner and were severely burned due to clinging of melted synthetic fibers. It was reported that body surface hairs tend to protrude through the material and are trapped by the woven knit. Natural fibers such as cotton and wool afford better protection under similar circumstances.

It is suggested that double-knit, synthetic fiber materials be investigated and evaluated and, if found to be a fire hazard, banned from use in a flight status.

CWO3 D. E. Anderson
VA-122

• Cursory investigation has disclosed that no agency has put forth any requirement for flammability limits of synthetic fibers. Manufacturers of uniforms sold in uniform shops and Navy exchanges may not even be aware that a potential hazard exists. Military passengers in other than transport aircraft are required to wear Nomex flight suits when traveling by air, but do not have to wear any covering when riding C-9Bs/C-130s, etc.



Vol. 21 No. 8 NAVAIR 00-75-510

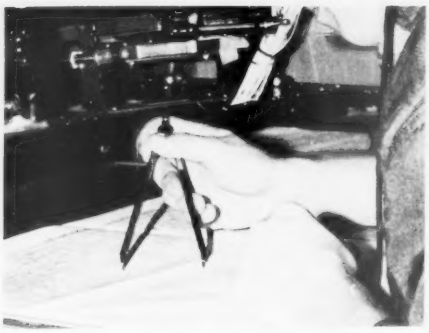
approach

Pg. 1

Pg. 6

CONTENTS

1 Mission: Typhoon Mopup
By LT Brad Winstead and LT Mike Willoughby
6 The "In-Close" Waveoff
By LCDR George Webb
10 Control Aircraft or Scrape Paint?
By AC2 L. F. Press
12 Another Big Vote for NATOPS
By CAPT I. Patch
16 A Point of View
By LT Mariner G. Cox
19 The "Brakes" of Naval Air
20 Approaches Are for Navigators, Too
By ENS S. W. Braisted
24 Don't Jump to Conclusions!
25 Avoiding Midairs
By LCDR D. J. Aites, USCG
26 Death at the Ramp
28 A Swinger Blows the Job
29 Happy Landing



Pg. 20

DEPARTMENTS

4 Air Breaks
14 Anymouse
23 Bravo Zulu
30 Letters

RADM Wm. H. Ellis
Commander, Naval Safety Center
CAPT W. F. Rau
Chief of Staff
CAPT Robert Lewis
Director, Aviation Safety Programs

CDR J. D. Connery, Editor-in-Chief
LCDR Barry Patterson, Publications Editor
LT Richard P. Shipman, Editor
Robert Trotter, Art Director
C. B. Weisiger, Helicopter Writer
R. L. Marcoux, Maintenance Writer
Blake Rader, Illustrator
Catherine M. Salas, Editorial Assistant

Our product is safety, our process is education, and our profit is measured in the preservation of lives and equipment and increased mission readiness.

PURPOSES AND POLICIES/APPROACH presents the most accurate information currently available on the subject of aviation accident prevention. Contents should not be considered as regulations, orders, or directives and may not be construed as incriminating under Art. 31, UCMJ. Photographs used to illustrate articles in APPROACH do not necessarily reflect the actual aircraft, air stations or ships that are described in the text.

PHOTOS/Official Navy or as credited. Non-naval activities are requested to contact NAVSAFECEN prior to reprinting APPROACH material.

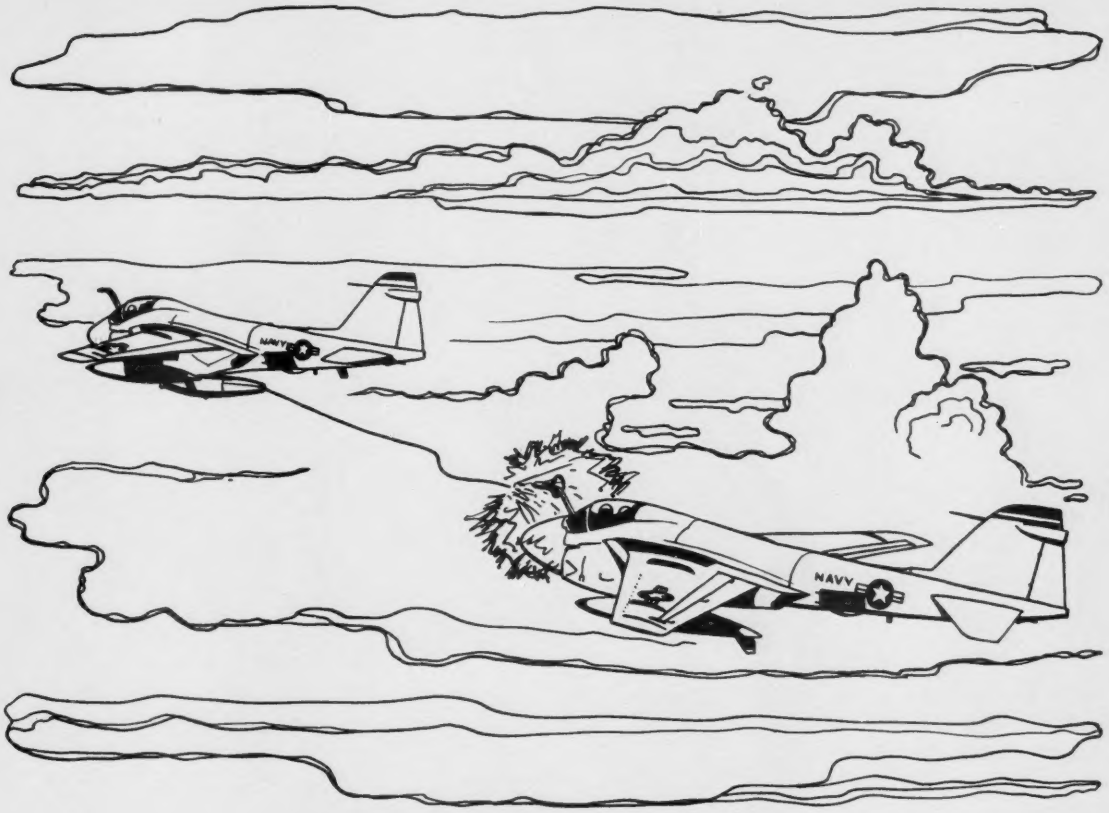
CORRESPONDENCE/Contributions are welcome. The right to make editorial changes to improve the material without altering the intended meaning is reserved. Reference to commercial products does not imply Navy endorsement. Views of guest-written articles are not necessarily those of NAVSAFECEN.

DISTRIBUTION/Requests for distribution changes should be directed to NAVSAFECEN, NAS Norfolk, VA 23511, Attn: Safety Publications Department. Phone: Area Code 804, 444-1321.

PRINTING/Issuance of this periodical approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS P-35. Library of Congress Catalog No. 57 60020.

CREDITS/Cover: A CH-46D of HC-3 transports water pipe as part of a restoration project in Mauritius following a devastating typhoon. Painting by Safety Center artist Blake Rader.

☆U.S. GOVERNMENT PRINTING OFFICE: 1975—635-273 11 REGION NO. 3-11



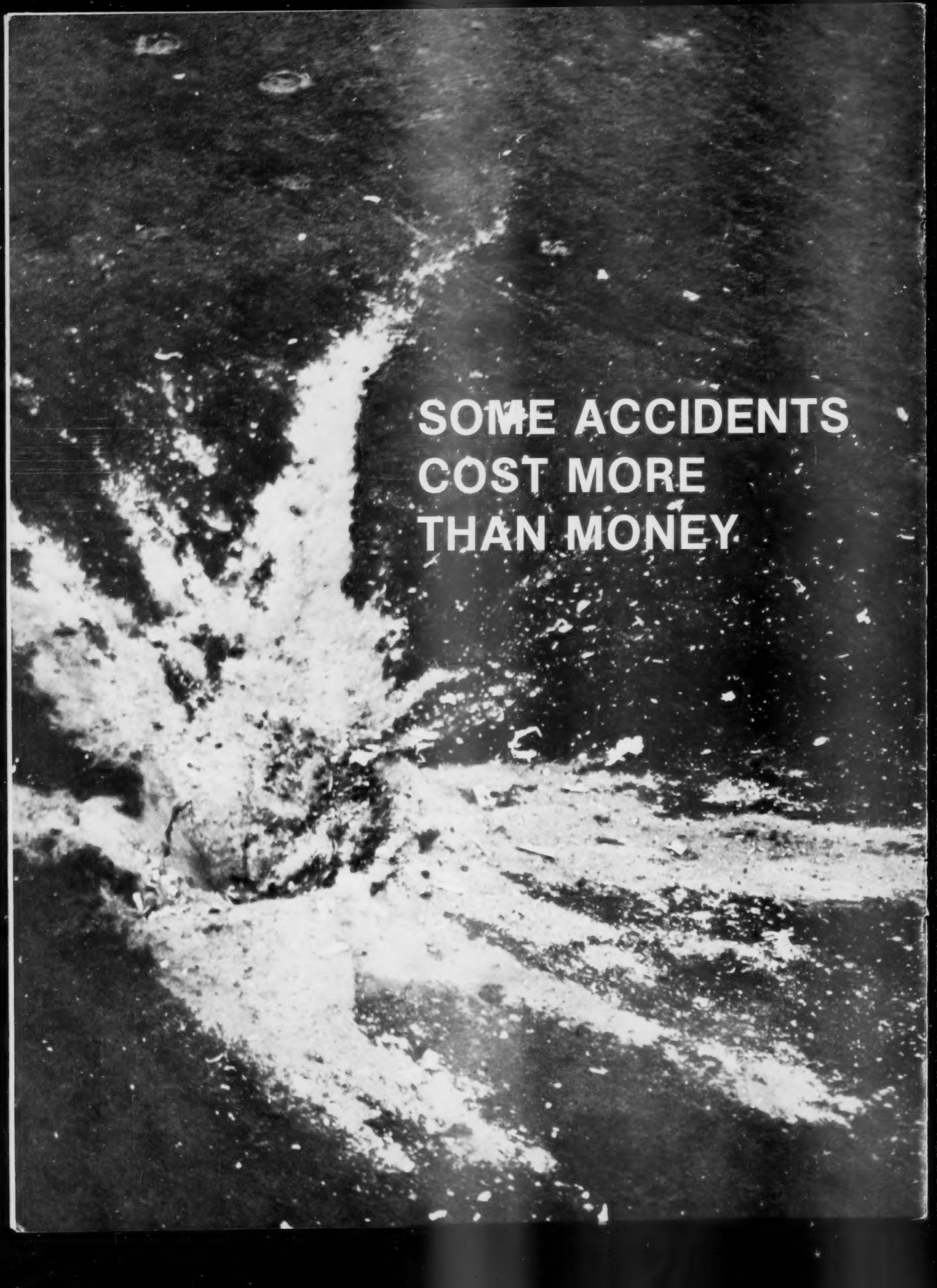
FUELING FIREBALL

LT MARK Oliver and his B/N, LT Tom Fraim, VA-85, had just completed two successful inflight refueling practice plugs on an A-6E overhead FORRESTAL. At 5000 feet and 250 KIAS, they were engaging the basket a third time when the tanker reel response failed. The slack in the hose formed a sine wave, moved forward toward the tanker, reversed, and increased in amplitude. As it reached the end of the hose, the coupling failed, leaving the basket on the refueling probe, with the tanker's flailing hose discharging raw fuel into the intakes of the receiver aircraft.

A wingman observed a large fireball emit from the intakes and engulf the aircraft. As the wingman called for emergency breakaway on the UHF, LT Oliver retarded the throttles and dropped down and aft, away from the tanker. LT Fraim observed the RPM on both engines decaying and reported a double flameout. Both generators dropped off the line. With LT Fraim reading the NATOPS emergency procedures from the pocket checklist, LT Oliver deployed the ram air turbine and placed the throttles in the cutoff position to clear the engines of excess fuel. Following a short eternity, LT Oliver brought the starboard throttle around the horn and a relight was successful. The port engine was then started and both engines were on the line and producing thrust by 3000 feet. An inflight inspection revealed no apparent damage, and a normal carrier arrestment was made.

Postflight examination of the aircraft revealed buckled panels in both intakes with numerous rivets missing from the starboard splitter/diverter assembly.

LT Oliver and LT Fraim, through expert crew coordination, professional application of NATOPS procedures, plus an exceptionally calm approach, handled the inflight emergency in a most professional manner and saved a valuable aircraft. ◄


SOME ACCIDENTS
COST MORE
THAN MONEY